

ASA 73rd Annual Meeting: July 27-30 – Gordon College:

Bioethics, Bio- and Digital Technology. A Report from Dr. Paul H. Carr

The 73rd Annual American Scientific Affiliation (ASA) meeting was held in the Ken Olsen Science Center of Gordon College, Wenham, MA, July 27-30, 2018. Rapidly advancing digital and artificial intelligence (AI) technology was the focus. The registration of 350 ASA members from 6 countries set a record for ASA annual meetings.

Keynote speaker **Francis S. Collins, MD, PhD**, spoke to an audience of over 500. This included people from surrounding communities whom the organizing committee had invited. Dr. Collins is a physician-geneticist noted for his leadership of the international Human Genome Project, which culminated in 2003 with a measurement of the complete sequence of the human DNA. Since 2009, he has served as the director of the National Institutes of Health, the largest supporter of biomedical research in the world.

Dr. Collins called his inspiring talk “The Joyful Complementarity of Science and Faith.” In the first part, he shared his conversion from an atheist to a believing Christian, aided by a Methodist minister who had given Collins *Mere Christianity* by C.S. Lewis. Collins had described this in his best-selling book, *The Language of God: A Scientist Presents Evidence for Belief*. In response, Dr. Collins received so many emails that he founded *Biologos* to answer them and to advocate his belief in evolutionary creation. *Biologos* Senior Scholar, Jeffery P. Schloss, PhD, presented the final plenary talk, “The Question of Purpose in the Living World: Does Evolution ‘Lead to Love?’ ” (see summary below).

In the second part of his talk, Dr. Collins addressed, “How should believers view advances in biotechnology?” He was particularly concerned about the ethics of the new gene-editing technique CRISPR, which can permanently modify the human genome. This should not be done. On the other hand, somatic cell gene editing does not affect the “germline,” (not passed on to children). Somatic cell editing focused on a particular organ should be pursued, as it holds promise for curing many genetic diseases. At the end of his talk, Dr. Collins picked up his guitar and led his large audience in singing “Praise the source of faith and learning.”

Douglas A. Lauffenburger, PhD, Ford Professor of Bioengineering and (founding) head of the Department of Biological Engineering at MIT, gave the plenary talk “Humanizing Therapeutics Discovery.” His research has the goal of reducing the cost of clinical human trials presently needed for approval of a new drug. His laboratory is using stem cells to construct human tissue, “organ-on-chip” platform technologies, and machine-learning computational models to bridge the preclinical-to-clinical divide.

Noreen Herzfeld, PhD, is the Nicholas and Bernice Reuter Professor of Science and Religion at St. John’s University and the College of St. Benedict. She holds degrees in computer science and mathematics from Pennsylvania State University and a PhD in theology from the Graduate Theological

Union, Berkeley. Dr. Herzfeld's plenary talk, "Cybernetic Enhancement and the Problem of the Self," discussed the possibility that some computer scientists envision a human brain uploaded to a computer chip to escape biological death. This conflation of self with the rational mind neglects emotions and relations with others and the natural world. It is a kind of Cartesian mind-body dualism. People like to Skype with close friends who are far away. A more complete relationship would include hugs. Dr. Herzfeld regards the human self as relational, embodied intelligence. She concluded by citing theologian Reinhold Niebuhr's *Nature and Destiny of Man (1943)*, "The Christian hope and consummation of life and history is less absurd than alternate doctrines, which seek to comprehend and complete life by powers and capacity already present in humanity and history." For Niebuhr and Herzfeld, mind and body are equally valued, as God created both.

Timothy P. Wallace, PhD, contributed a paper entitled "A Christian Response to the Good, Bad, and Improbable Predictions of Artificial Intelligence Futurists." Marvin Minsky and others who started the field of Artificial Intelligence (AI) in 1956 made many optimistic predictions that have not come true. However, the AI prediction field has been a growth industry ever since. Some are predicting a "singularity" in which computers attain near divinity and enable people to live forever by copying their brains into new hardware. Dr. Wallace, who has more than 35 years of experience building real systems at his MIT Laboratory, believes these optimistic predictions may take at least a century -- if they are ever actualized. MIT professor, Rodney Brooks, who established companies selling robots, agrees with him. The wildest predictions come from philosophers, physicists, visionary CEOs, and others who have not designed actual intelligent systems.

Paul H. Carr, PhD, contributed a paper called "Helping the 33%: Automation-Displaced Workers." Up to one third of the American work force will have to switch to new occupations by 2030, according to the McKinsey Global Institute's recent automation report. After the beginning of the Industrial Revolution in England, coal miners, who had left their farms, rioted in response to their oppressive poverty. John Wesley preached successfully to thousands of these miners in open fields and founded societies and schools, giving birth to Methodism. Education is essential for helping automation-displaced workers to be qualified for new jobs. Since 1964 the wages of those with education beyond a Bachelor's Degree have doubled, while high school dropouts are earning less. Religious communities have established universities. Methodists founded Boston University to educate their ministers. Similarly, Congregationalists founded Harvard in 1636. A recent example is Jesuit Gregory Boyle's founding of Homeboy Industries. Dr. Carr discussed options for funding a minimum income for those who would meet a means test, or a basic income for all citizens. Funds could come from eliminating all other welfare services. Another option could be a fee on fossil fuels whose emissions are warming our climate. This would stimulate the development of green energy technology. A family of four could receive an income of \$2000.00 per family.

Nigel M. de S. Cameron, PhD, MBA is President-emeritus of the Center for Policy on Emerging Technology in Washington DC. He is also the Technology/Futures editor at UnHerd.com. In the 1990s he served as Distinguished Professor of Theology and Culture at Trinity Evangelical Divinity School, and more recently he was a research professor and associate dean at Chicago-Kent College of Law in

the Illinois Institute of Technology. In Cameron's plenary talk, "A Human Century?" he said, "In the 20th century, both global communism and fascism were defeated at great cost. The issue of the 21st century is whether the digital revolution will enhance or depress our flourishing as human beings." Knowledge comes but wisdom lingers. We have a plethora of information today but a paucity of wisdom. Cambridge Analytics used personal information from Facebook to tailor ads to influence voters in the 2016 election. The Chinese Government now collects information on individuals and uses it to deny them the ability to travel if they oppose government policy. Our present challenge is to counter the use of digital technology to gain power over others.

Jeffrey P. Schloss, PhD, received his PhD in ecology/evolutionary biology from Washington University. He is currently senior scholar at the BioLogos Foundation and distinguished professor and T. B. Walker Chair of Biology at Westmont College, where he also directs the Center for Faith, Ethics & Life Sciences. At the beginning of Dr. Schloss's plenary talk, "The Question of Purpose in the Living World: Does Evolution 'Lead to Love?'" he cited biologists like atheist Richard Dawkins, who believe that Darwinian evolution is blind-purposeless chance. Dr. Schloss, in making his case for evolutionary creation, showed how evolution has direction and is purpose-suitable for life. He contrasted this with purpose-seeking, which is like a refrigerator that engineers design with a thermostat to keep wine bottles cold. Purpose-suitable is like a cool cave or cellar in which wine can be stored (at a lower environmental cost). Our earth is uniquely purpose-suitable for life. Our neighboring planet Venus, with its thick carbon dioxide atmosphere, is too hot, and Mars with its thin atmosphere is too cold. "Cooperation is now seen as a primary driving force between greater levels of complexity and organization" (*Darwinian Dynamics 2001* by Michod and Roze). The first cells on earth formed about 3.8 billion years ago. Their complexity increased when autonomous reproduction led to cooperative sexual reproduction. A major life transition occurred about 550 million years ago with the Cambrian explosion of multicellular life, made possible by specialized interdependent cooperating cells. Cold-blooded reptiles evolved into warm-blooded mammals with greater autonomy over their environment. Early primates have evolved into our present *homo sapiens*. After the invention of agriculture about 10,000 years ago, our population has exploded from several million to over seven billion people, whose carbon dioxide emissions from fossil fuel burning are warming our planet. We are still wreaking the results of this transformation of our environment. Gaining control of these forces is our challenge.

Abstracts of all the talks, with pdfs of the PowerPoint talks, and videos may be found on the www.asa3.org website and by [clicking here](#).

A 2 minute video of Francis Collins' ASA talk "The Joyful Complementarity of Science and Faith" with singing at the end, can be seen at <https://youtu.be/Xeyw545xxaEat>

Videos of all the plenary ASA plenary talks can be seen at <http://www.ustream.tv/channel/DCBnnuBfpyz>

A PowerPoint of Dr. Carr's ASA talk, which includes John Wesley's ministry, is available at <https://www.slideshare.net/paulhcarr/helping-the-33-automation-displaced-workers>